REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 24 and 27-47 are pending in the present application, Claims 24, 27, 28 and 47 having been amended and Claims 25 and 26 having been cancelled by way of the present amendment.

Support for the amendments to Claims 24 and 47 are found in the specification, for example at page 15, lines 25-26 and 31-32; page 17, lines 28 and 34-25; page 18, line 6; page 29, lines 10 and 21; page 30, lines 22-24; page 31, lines 2 and 21; and page 32, lines 8-9. Thus no new matter is added.

In the outstanding Office Action, Claims 24-47 were rejected under 35 U.S.C. §103(a) as unpatentable over Zinky et al. (U.S. Patent No. 6,480,879, hereinafter Zinky) in view of Neureiter et al. ("The BRAIN Quality of Service Architecture for Adaptable Services with Mobility Support", herein Neureiter) and in further view of Baugher (U.S. Pat. No. 5,644,715).

Addressing now the rejections of Claim 24-47 under 35 U.S.C. §103(a) as unpatentable over Zinky, Neureiter and Baugher, these rejections are respectfully traversed.

Amended Claim 24 recites, in part,

> configure an application programming interface as a data model describing quality-of-service contracts and quality-of-service adaptation paths as specified by quality-of-service aware mobile multimedia applications using said application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications, a quality-of-service adaptation path defining an adaptation policy identifying quality-of-service specifications and allows quality-of-service changes, and
> wherein said middleware is adapted to negotiate with communication peers to generate adaptation paths by having a specific adaptation path proposed by an initiator of communication peers being validated by each of other communication peers in accordance with a corresponding

adaptation policy, and having each of said other communication peers respond with a counter offer that is limited to a definition of a subset of the specific adaptation path proposed by said initiator, to measure the actual quality-of-service, and to solve any quality-of-service problem by deciding which of the possible adaptations to perform, and

wherein the adaptation paths are modeled as hierarchical finite state machines, each hierarchical finite state machine comprising:

a finite state machine associated with a User Context, a finite state machine associated with an Application Context nested in said finite state machine associated with said User Context and a finite state machine associated with a Session Context nested in said finite state machine associated with said Application Context,

wherein said User Context, said Application Context and said Session Context each identify an arrangement of quality-of-service specifications enforceable through a set of streams belonging to a given user, application and session, respectively.

Claim 47 recites similar features.

Zinky describes a system that determines a quality of service and regulates activity in a distributed system based on the determined quality of service.

However, Zinky does not describe or suggest the features recited in Claim 24 with regard to the recited adaptation paths.

The outstanding Action states on pages 4 and 5 that "Zinky teaches...where the adaptation paths are expressed as hierarchical finite state machines based on quality-of-service contexts (Zinky, col. 6, lines 22-36)...Zinky teaches a contract that detects a transition condition that results in one of three regions of QoS." However, Applicants respectfully traverse the position that this portion or any other portion of Zinky describes or suggests the application paths which are modeled as hierarchical finite state machines, as is recited in Claim 24.

Specifically, Zinky in no way describes or suggests that each hierarchical finite state machine comprises a finite state machine associated with a User Context, a finite state

machine associated with an Application Context nested in the finite state machine associated with the User Context and a finite state machine associated with a Session Context nested in the finite state machine associated with the Application Context, where the User Context, the Application Context and the Session Context each identify an arrangement of quality-of-service specifications enforceable through a set of streams belonging to a given user, application and session, respectively.

In other words, Zinky merely describes that "QuO Contracts define varying levels of QoS called "regions."" However, neither the QuO contracts nor the regions described in Zinky are equivalent to the hierarchical finite state machines recited in Claim 24. Thus, Applicants respectfully submit that Zinky does not describe or suggest this feature of Claim 24.

Nevertheless, the outstanding Office Action relies on Neureiter and Baugher as curing the above noted deficiencies of Zinky with respect to the claimed invention.

Neureiter describes a general architecture of a system enabling applications to specify QoS and adaptations for QoS violations. However, Neureiter does not describe or suggest the application paths, which are modeled as hierarchical finite state machines, recited in Claim 24.

Baugher describes a system for coordinating distributed multimedia resources. However, Baugher does not describe or suggest the application paths, which are modeled as hierarchical finite state machines, recited in Claim 24.

In addition, the feature of the application paths which are modeled as hierarchical finite state machines recited in Claim 24 provides, at least, the advantage that this feature provides a means for QoS synchronization, specifically, a certain pre-defined correlation of the QoS level of streams belonging to a set. For instance, this QoS synchronization provides a valuable tool for dealing with QoS violations because it allows for the allocation of

11

connection resources dynamically and automatically to streams in a way that treats the group of streams belonging to a given entity equally. In addition, it is also possible to adjust the amount of QoS synchronization to individually address the user's and application's needs.

Further, due to the inclusion of the hierarchical structure, QoS parameters of a given QoS context/FSM (e.g. the Session Context) can be derived from those of nesting QoS contexts/FSMs (e.g. the Application Context) and/or be indirectly applicable to the nested QoS contexts/FSMs. Thus, an efficient way of specifying QoS parameters at a low level, down to the lowest (stream) level is provided. Thus, the system, while being simple in organization and therefore simply to deploy for application programmers, users and site managers, is still flexible enough to take into account the many aspects of specifying QoS and adaptation to QoS violations.

Accordingly, Applicants respectfully submit that Claim 24 and similarly Claim 47, and claims depending therefrom, patentably distinguish over Zinky, Neureiter and Baugher considered individually or in combination.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 24 and 27-47, as amended, is patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.
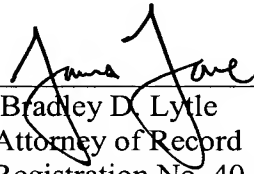
Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

Bradley D. Lytle
Attorney of Record
Registration No. 40,073

James Love
Registration No. 58,421

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13